IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:
Hiroaki YUKAWA

Examiner: G. Patel

Application No.: 09/801,343

Art Unit: 2655

Filed: March 8, 2001

Confirmation No.: 4979

For: OPTICAL PICKUP DEVICE AND OPTICAL DISC DEVICE

APPELLANT'S BRIEF

MS APPEAL BRIEF - PATENTS
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

This brief is in furtherance of the Notice of Appeal, filed in this case on March 16, 2004, the period for reply being extended because May 16, 2004 was a Sunday.

The fees required under § 1.17(f) and any required petition for extension of time for filing this brief and fees therefor, are dealt with in the accompanying TRANSMITTAL OF APPEAL BRIEF.

This brief is transmitted in triplicate.

This brief contains items under the following headings as required by 37 C.F.R. § 1.192 and M.P.E.P. § 1206:

I. Real Party In Interest
II Related Appeals and Interferences
III. Status of Claims
IV. Status of Amendments
V. Summary of Invention
VI. Issues
VII. Grouping of Claims
VIII. Arguments
IX. Claims Involved in the Appeal
Appendix A Claims

I. REAL PARTY IN INTEREST

The real party in interest for this appeal is Sony Corporation of Tokyo, Japan

("Sony"). An assignment of all rights in the present application to Sony was executed by the inventor and recorded by the U.S. Patent and Trademark Office on **reel 011618** at **frame 0398**.

II. RELATED APPEALS AND INTERFERENCES

There are no other appeals or interferences that will directly affect or be directly affected by or have a bearing on the Board's decision in this appeal.

III. STATUS OF CLAIMS

A. Total Number of Claims in Application

There are 29 claims pending in application.

B. Current Status of Claims

1. Claims canceled: None
2. Claims withdrawn from consideration but not canceled: 3-8 and 11-16
3. Claims pending: 1, 2, 9, 10, and 17-29
4. Claims allowed: None
5. Claims rejected: 1, 2, 9, 10, and 17-29

C. Claims On Appeal

The claims on appeal are claims 1, 2, 9, 10, and 17-29.

IV. STATUS OF AMENDMENTS

On June 23, 2003, Appellant filed a Preliminary Amendment in which claims 1, 2, 9, and 10 were amended to improve form. On October 1, 2003, and in response to a non-final Office Action dated July 21, 2003 (Paper No. 5), title of the invention was amended to more appropriately describe the invention, the specification was amended to correct typographical errors, figures 1-7 were amended to include a "Prior Art" legend, and claims 1, 2, 9, 10, and 29 were amended.

Accordingly, the claims enclosed herein as Appendix A incorporate the amendments indicated in the paper filed by Appellant on October 1, 2003.

V. SUMMARY OF INVENTION

Independent claim 1 recites an optical pickup device comprising, a first light source (first laser chip; see pg. 19, lines 1-5) for emitting a first light beam (red laser beam) having a first wavelength (635 nm); a second light source (second laser chip) for emitting a second light beam (infrared laser beam) having a second wavelength (780 nm) different from the first wavelength; an objective lens (5) for focusing said first light beam (red laser beam) or said second light beam (infrared laser beam) to the signal recording surface (106a, 106b) of an optical recording medium of a first type (DVD) matching to the first wavelength (red laser beam) or that of an optical recording medium of a second type (CD) matching to the second wavelength (infrared laser beam), whichever appropriate; a photodetector (7) for detecting the light beam focused on the signal recording surface (106a, 106b) of the optical recording medium of the first type (DVD) or that of the optical recording medium of the second type (CD), whichever appropriate, by the objective lens (5) and reflected by the signal recording surface (106a, 106b); and a diffraction element (6) arranged in the light path from the light sources (first laser chip, second laser chip) to the photodetector (7) by way of one of the first or second type (DVD, CD) of optical recording medium, the diffraction element (6) having a first diffraction angle and a second diffraction angle, wherein a difference between the first diffraction angle and the second diffraction angle is predetermined to offset a distance (80μm to 120μm) separating the first light source (first laser chip) and the second light source (second laser chip); at least one of the first light beam (red laser beam) adapted to be used for reading information signals from the signal recording surface (106a) of the optical recording medium of the first type (DVD) and reflected by the reflecting surface, or the second light beam (infrared laser beam) adapted to be used for reading information signals from the signal recording surface (106b) of the optical recording medium of the second type (CD) and reflected by the reflecting surface being diffracted by the diffraction element (6), wherein the first diffraction angle diffracts the first reflected light beam and the second diffraction angle diffracts the second reflected light beam so that the first reflected light beam and the second reflected light beam being focused to a same spot on the light receiving surface (7a) of the photodetector (7).

Independent claim 2 recites an optical pickup device comprising a first light source (111a) for emitting a first light beam having a first wavelength; a second light source (111b) for emitting a second light beam having a second wavelength different from the first

wavelength; an objective lens (5) for focusing said first light beam or said second light beam to the signal recording surface of an optical recording medium of a first type (106a) matching to the first wavelength or that of an optical recording medium of a second type (106b) matching to the second wavelength, whichever appropriate; a photodetector (7) for detecting the light beam focused on the signal recording surface of the optical recording medium of the first type (106a) or that of the optical recording medium of the second type (106b), whichever appropriate, by the objective lens (5) and reflected by the signal recording surface (106a, 106b); and a diffraction element (6) arranged on the light path from the light sources (111a, 111b) to the photodetector (7) by way of one of the first or second type of optical recording medium, the diffraction element (6) having a first diffraction angle and a second diffraction angle, wherein a difference between the first diffraction angle and the second diffraction angle is predetermined to offset a distance separating the first light source (111a) and the second light source (111b); each of the first light beam adapted to be used for reading information signals from the signal recording surface of the optical recording medium of the first type (106a) and reflected by the reflecting surface and the second light beam adapted to be used for reading information signals from the signal recording surface of the optical recording medium of the second type (106b) and reflected by the reflecting surface being diffracted by the diffraction element, wherein the first diffraction angle diffracts the first reflected light beam and the second diffraction angle diffracts the second reflected light beam so that the first reflected light beam and the second reflected light beam being focused to a same spot on the light receiving surface (7a) of the photodetector (7).

Independent claim 9 recites an optical disc device comprising a rotary operating mechanism for driving one or more than one optical discs operating so many pieces of optical recording medium as to rotate; and an optical pickup device arranged opposite to the signal recording surfaces of the one or more than one optical discs driven to rotate by said rotary operating mechanism (pg. 33, lines 1-13); said optical pickup device comprising a first light (111a) source for emitting a first light beam having a first wavelength; a second light source (111b) for emitting a second light beam having a second wavelength different from the first wavelength; an objective lens (5) for focusing said first light beam or said second light beam to the signal recording surface of an optical recording medium of a first type (106a) matching to the first wavelength or that of an optical recording medium of a second type (106b) matching to the second wavelength, whichever appropriate; a photodetector (7) for detecting

the light beam focused on the signal recording surface of the optical recording medium of the first type (106a) or that of the optical recording medium of the second type (106b), whichever appropriate, by the objective lens (5) and reflected by the signal recording surface (106a, 106b); and a diffraction element (6) arranged on the light path from the light sources (111a, 111b) to the photodetector (7) by way of one of the first or second type of optical recording medium, the diffraction element (6) having a first diffraction angle and a second diffraction angle, wherein a difference between the first diffraction angle and the second diffraction angle is predetermined to offset a distance separating the first light source (111a) and the second light source (111b); at least either the first light beam adapted to be used for reading information signals from the signal recording surface of the optical recording medium of the first type (106a) and reflected by the reflecting surface or the second light beam adapted to be used for reading information signals from the signal recording surface of the optical recording medium of the second type (106b) and reflected by the reflecting surface being diffracted by the diffraction element (6), wherein the first diffraction angle diffracts the first reflected light beam and the second diffraction angle diffracts the second reflected light beam so that the first reflected light beam and the second reflected light beam being focused to a same spot on the light receiving surface (7a) of the photodetector (7).

Independent claim 10 recites an optical disc device comprising a rotary operating mechanism for driving one or more than one optical discs operating so many pieces of optical recording medium as to rotate; and an optical pickup device arranged opposite to the signal recording surfaces of the one or more than one optical discs driven to rotate by said rotary operating mechanism (pg. 33, lines 1-13); said optical pickup device comprising a first light source (111a) for emitting a first light beam having a first wavelength; a second light source (111b) for emitting a second light beam having a second wavelength different from the first wavelength; an objective lens (5) for focusing said first light beam or said second light beam to the signal recording surface of an optical recording medium of a first type (106a) matching to the first wavelength or that of an optical recording medium of a second type (106b) matching to the second wavelength, whichever appropriate; a photodetector (7) for detecting the light beam focused on the signal recording surface of the optical recording medium of the first type (106a) or that of the optical recording medium of the second type (106b), whichever appropriate, by the objective lens (5) and reflected by the signal recording surface (106a, 106b); and a diffraction element (6) arranged on the light path from the light sources (111a,

111b) to the photodetector (7) by way of one of the first or second type of optical recording medium (DVD, CD), the diffraction element having a first diffraction angle and a second diffraction angle, wherein a difference between the first diffraction angle and the second diffraction angle is predetermined to offset a distance separating the first light source (111a) and the second light source (111b); each of the first light beam adapted to be used for reading information signals from the signal recording surface of the optical recording medium of the first type (106a) and reflected by the reflecting surface and the second light beam adapted to be used for reading information signals from the signal recording surface of the optical recording medium of the second type (106b) and reflected by the reflecting surface being diffracted by the diffraction element, wherein the first diffraction angle diffracts the first reflected light beam and the second diffraction angle diffracts the second reflected light beam so that the first reflected light beam and the second reflected light beam being focused to a same spot on the light receiving surface (7a) of the photodetector (7).

Independent claim 29 recites an optical pickup device comprising a first light source (111a) for emitting a first light beam having a first wavelength; a second light source (111b) for emitting a second light beam having a second wavelength different from the first wavelength; an objective lens (5) for focusing said first light beam or said second light beam to the signal recording surface of an optical recording medium of a first type (106a) matching to the first wavelength or that of an optical recording medium of a second type (106b) matching to the second wavelength, whichever appropriate; a photodetector (7) for detecting the light beam focused on the signal recording surface of the optical recording medium of the first type (106a) or that of the optical recording medium of the second type (106b), whichever appropriate, by the objective lens (5) and reflected by the signal recording surface (106a, 106b); and a diffraction element (6) arranged on the light path, wherein the diffraction element (6) includes a first diffraction angle and a second diffraction angle, wherein a difference between the first diffraction angle and the second diffraction angle is predetermined to offset a distance separating the first light source (111a) and the second light source (111b); at least either the first light beam adapted to be used for reading information signals from the signal recording surface of the optical recording medium of the first type (106a) and reflected by the reflecting surface or the second light beam adapted to be used for reading information signals from the signal recording surface of the optical recording medium of the second type (106b) and reflected by the reflecting surface being diffracted by

the diffraction element (6), wherein the first diffraction angle diffracts the first reflected light beam and the second diffraction angle diffracts the second reflected light beam so that the first reflected light beam and the second reflected light beam being focused to a same spot on the light receiving surface (7a) of the photodetector (7).

Accordingly, the optical pickup device recited in claims 1, 2, 9, 20, and 29 includes two light sources (first and second laser chips) that are spaced a predetermined distance apart. Each light source emits light at a predetermined wavelength so that information may be recorded to and read from optical recording media of differing types (CD, DVD). The optical pickup device further includes an objective lens (5) that focuses the emitted light from either of the two light sources onto the signal surface of the optical recording medium. Light reflected from the optical recording medium passes through a diffraction element (6) that diffracts the reflected light at an angle based on the predetermined distance at which the two light sources are spaced. The diffracted light is then focused onto a light receiving surface (7a) of a photodetector (7). Despite each light source emitting light at a different wavelength, the diffracted light originating from the first and second light source is focused onto the same spot of the light receiving surface of the photodetector.

VI. ISSUES

The issue presented for appeal in this application is as follows:

1. Whether the Examiner erred in finally rejecting claims 1, 2, 9, 10, and 17-29 under 35 U.S.C. §103 as unpatentable over *Shimano et al.*, U.S. Patent No. 6,400,664 in view of *Suguwara et al.,* U.S. Patent No. 6,055,122.

VII. GROUPING OF CLAIMS

For purposes of this appeal brief only, and without conceding the teachings of any prior art reference, the claims have been grouped as indicated below:

Group Claim(s)

I. Claims 1 and 17-19 stand or fall together with respect to the §103 rejection over *Shimano* in view of *Suguwara.*

II. Claims 2 and 20-22 stand or fall together with respect to the §103 rejection over *Shimano* in view of *Suguwara.*

III. Claims 9 and 23-25 stand or fall together with respect to the §103 rejection over *Shimano* in view of *Suguwara.*

IV. Claims 10 and 26-28 stand or fall together with respect to the §103 rejection over *Shimano* in view of *Suguwara.*

V. Claim 29 stands alone with respect to the §103 rejection over *Shimano* in view of *Suguwara.*

In Section VIII below, Appellant has included arguments supporting the separate patentability of each claim group as required by 37 C.F.R. 1.192(c)(7). See, for example, M.P.E.P. § 1206.

VIII. ARGUMENTS

1. In the final Office Action dated December 8, 2003 (Paper No. 7), the following rejections were presented by the Examiner:

(i) 35 U.S.C. §112, first paragraph

None

(ii) 35 U.S.C. §112, second paragraph

None

(iii) 35 U.S.C. §102

None

(iv) 35 U.S.C. §103

Claims 1, 2, 9, 10, and 17-29 are rejected under 35 U.S.C. §103 as unpatentable over *Shimano et al.*, U.S. Patent No. 6,400,664 in view of *Suguwara et al.,* U.S. Patent No. 6,055,122.

(v) Other

None

2. For at least the reasons set forth below, the aforementioned claim rejection is both technically and legally unsound. Accordingly, the §103 rejections should be reversed.

(i) 35 U.S.C. §112, first paragraph

None

(ii) 35 U.S.C. §112, second paragraph

None

(iii) 35 U.S.C. §102

None

(iv) **35 U.S.C. §103**

A. Claims 1 and 17-19 are allowable over the applied art

Independent claim 1 recites an optical pickup device comprising, a first light source for emitting a first light beam having a first wavelength; a second light source for emitting a second light beam having a second wavelength different from the first wavelength; an objective lens for focusing said first light beam or said second light beam to the signal recording surface of an optical recording medium of a first type matching to the first wavelength or that of an optical recording medium of a second type matching to the second wavelength, whichever appropriate; a photodetector for detecting the light beam focused on the signal recording surface of the optical recording medium of the first type or that of the optical recording medium of the second type, whichever appropriate, by the objective lens and reflected by the signal recording surface; and a diffraction element arranged in the light path from the light sources to the photodetector by way of one of the first or second type of optical recording medium, the diffraction element having a first diffraction angle and a second diffraction angle, wherein a difference between the first diffraction angle and the second diffraction angle is predetermined to offset a distance separating the first light source and the second light source; at least one of the first light beam adapted to be used for reading information signals from the signal recording surface of the optical recording medium of the first type and reflected by the reflecting surface, or the second light beam adapted to be used for reading information signals from the signal recording surface of the optical recording medium of the second type and reflected by the reflecting surface being diffracted by the diffraction element, wherein the first diffraction angle diffracts the first reflected light beam and the second diffraction angle diffracts the second reflected light beam so that the first reflected light beam and the second reflected light beam being focused to a same spot on the light receiving surface of the photodetector.

Shimano discloses an optical head that eliminates a disturbance that occurs in a focus error signal in association with the decentering of an optical disk when an optical spot crosses a track on a storage film surface, and in addition the optical head cancels an off-set which occurs in a tracking error signal in association with the movement of an objective lens. Referring to Fig. 20, *Shimano* illustrates an optical system comprising a 650 nm

semiconductor laser 2001, a 780 nm semiconductor laser 2002, diffraction gratings 2003 and 2004 that generate $\pm 1^{st}$ order diffracted lights that correspond to laser 2001 and 2002, respectively. The semiconductor laser 2001 is reflected by a dichromatic mirror 2005, passes through a beam splitter 2006, and is reflected at a triangle reflection mirror 2007 and converged on a recording medium 2009 by an objective lens 2008. Light reflected from the recording medium 2009, passes through objective lens 2008, is reflected by the triangle reflection mirror 2007, passes through the beam splitter 2006, the dichromatic mirror 2005, and an optical component G, and converged on an optical detector 2010. The optical component G can be a curvilinear diffraction grating 2101 or 2102 either of which outputs optical spots for each of the 0-order and $\pm 1^{st}$ order diffracted lights generated by diffraction grating 2003 or 2004. The optical spots are output in various predetermined locations on the optical detector surface. The Examiner acknowledged that *Shimano* fails to disclose, teach, or suggest that the curvilinear diffraction grating includes a first and second diffraction angle associated with the reflected light beams of the first and second light sources, respectively. *See* Paper No. 7, p. 3, lines 23-28. Accordingly, *Shimano* cannot diffract the first reflected light beam and the second reflected light beam so that they are both focused to the same spot on the light receiving surface, as recited in the claims.

Sugawara discloses a holographic unit 10a that includes an optical diffraction element, a light emitting device 10b, a photodetection device 10c, a light emitting and receiving unit 10d including the light emitting device 10b and the photodetection device 10c. The light emitting and receiving unit 10d is fixedly bonded to the holographic unit 10a through an adhesive. *Sugawara* fails to disclose, teach, or suggest at least the diffraction element having a first diffraction angle and a second diffraction angle, wherein a difference between the first diffraction angle and the second diffraction angle is predetermined to offset a distance separating the first light source and the second light source, as recited in the claims.

The Examiner alleges "it is well known in the art that two beams with two different wavelengths inherently need[s] to be diffracted at different angle[s], since both of them are projecting beams on the same surface and since two light sources are positioned at different places [an] offset needs to be adjusted to focus [the beams] on the same spot." *See* Paper No. 7, p. 7, p. 3, line 29 through p. 4, line 3. However, the Examiner has failed to cite an example in either of the applied references to support this statement. As a rule, "assertions of

technical facts in areas of esoteric technology must always be supported by citation to some reference work recognized as standard in the pertinent art and the appellant given, in the Patent Office, the opportunity to challenge the correctness of the assertion or the notoriety or repute of the cited reference." (Citations omitted). *In re Pardo and Landau*, 214 USPQ 673, 677 (CCPA 1982). The support must have existed at the time the claimed invention was made. *In re Merck & Co., Inc.*, 231 USPQ 375, 379 (Fed. Cir. 1986). Moreover, "allegations concerning specific 'knowledge' of the prior art, which might be peculiar to a particular art should also be supported and the appellant similarly given the opportunity to make a challenge." (Citations omitted). *In re Pardo and Landau*, 214 USPQ 673, 677 (CCPA 1982). Accordingly, this statement made by the Examiner is conclusory and mere speculation, which is insufficient to support or sustain the rejection.

While the Examiner cited a portion of *Sugawara*, which allegedly discloses a diffraction element having a first diffraction angle and a second diffraction angle, this citation falls far short of supporting this position. First, *Sugawara* discloses that only one light emitting element is used. *See* Fig. 5, element 10b. Second, the dashed and solid lines shown in Fig. 5, illustrate the reflected light and emitted light, respectively. Furthermore, the diffraction element described in Fig. 5 is a holographic element that contains two diffraction elements 10a6 and 10a7. *Sugawara* discloses that diffraction element 10a6 produces three light beams and diffraction element 10a7 reflects a zero-order light beam from among the three light beams reflected from the diffraction grating 10a6. *See* col. 7, lines 28-39. Because *Sugawara* discloses the use of only one light emitting element emitting light at only one wavelength, it follows that *Sugawara* neither discloses nor has a need for a diffraction grating as recited in at least claim 1. Furthermore, even if the light emitting element of *Sugawara* could emit light at more than one wavelength, which it cannot, *Sugawara* still fails to disclose, teach, or suggest at least the diffraction element having a first diffraction angle and a second diffraction angle, wherein a difference between the first diffraction angle and the second diffraction angle is predetermined to offset a distance separating the first light source and the second light source, as recited in claim 1.

In summary, *Shimano* and *Sugawara* either singly or combined fail to disclose, teach, or suggest at least a diffraction element having a first diffraction angle and a second diffraction angle, wherein a difference between the first diffraction angle and the second diffraction angle is predetermined to offset a distance separating the first light source and the

second light source, wherein the first diffraction angle diffracts the first reflected light beam and the second diffraction angle diffracts the second reflected light beam so that the first reflected light beam and the second reflected light beam being focused to a same spot on the light receiving surface of the photodetector. As discussed above, the Examiner acknowledged that *Shimano* fails to disclose the aforementioned claim element, and because *Sugawara* has only one light emitting element it cannot disclose, teach, or suggest the aforementioned claim element. For at least these reasons, a *prima facie* case for obviousness has not been established.

To establish *prima facie* obviousness of a claimed invention, all of the claim limitations must be taught or suggested by the prior art. In re Royka, 490 F.2d 981, 180 USPQ 580 (CCPA 1974). Moreover, obviousness "cannot be established by combining the teachings of the prior art to produce the claimed invention, absent some teaching or suggestion supporting the combination." ACS Hosp. Sys. V. Montefiore Hosp., 732 F.2d 1572, 1577, 221 USPQ 929, 933 (Fed. Cir. 1984). Accordingly, Appellant the rejection of claim 1 cannot be sustained.

Claims 17-19 depend from claim 1. By virtue of this dependency, Appellant submits that claims 17-19 are allowable for at least the same reasons given above with respect to claim 1. In addition, Appellant submits that claims 17-19 are further distinguished over *Shimano* and *Sugawara* by the additional elements recited therein, and particularly with respect to each claimed combination. Applicant respectfully requests, therefore, that the rejection of claims 17-19 under 35 U.S.C. §103 cannot be sustained, and that these claims be allowed.

B. Claims 2 and 20-22 are allowable over the applied art

Independent claim 2 recites an optical pickup device comprising a first light source for emitting a first light beam having a first wavelength; a second light source for emitting a second light beam having a second wavelength different from the first wavelength; an objective lens for focusing said first light beam or said second light beam to the signal recording surface of an optical recording medium of a first type matching to the first wavelength or that of an optical recording medium of a second type matching to the second wavelength, whichever appropriate; a photodetector for detecting the light beam focused on the signal recording surface of the optical recording medium of the first type or that of the

optical recording medium of the second type, whichever appropriate, by the objective lens and reflected by the signal recording surface; and a diffraction element arranged on the light path from the light sources to the photodetector by way of one of the first or second type of optical recording medium, the diffraction element having a first diffraction angle and a second diffraction angle, wherein a difference between the first diffraction angle and the second diffraction angle is predetermined to offset a distance separating the first light source and the second light source; each of the first light beam adapted to be used for reading information signals from the signal recording surface of the optical recording medium of the first type and reflected by the reflecting surface and the second light beam adapted to be used for reading information signals from the signal recording surface of the optical recording medium of the second type and reflected by the reflecting surface being diffracted by the diffraction element, wherein the first diffraction angle diffracts the first reflected light beam and the second diffraction angle diffracts the second reflected light beam so that the first reflected light beam and the second reflected light beam being focused to a same spot on the light receiving surface of the photodetector.

As discussed above, *Shimano* and *Sugawara* either singly or combined fail to disclose, teach, or suggest at least diffraction element having a first diffraction angle and a second diffraction angle, wherein a difference between the first diffraction angle and the second diffraction angle is predetermined to offset a distance separating the first light source and the second light source, and wherein the first diffraction angle diffracts the first reflected light beam and the second diffraction angle diffracts the second reflected light beam so that the first reflected light beam and the second reflected light beam being focused to a same spot on the light receiving surface of the photodetector. In particular, the Examiner acknowledged that *Shimano* fails to disclose the aforementioned claim element, and as Appellant discussed above, because Sugawara has only one light emitting element it cannot disclose, teach, or suggest the aforementioned claim element. For at least these reasons, a *prima facie* case for obviousness has not been established. Accordingly, Appellant respectfully requests that the rejection of claim 1 not be sustained.

Claims 20-22 depend from claim 2. By virtue of this dependency, Appellant submits that claims 20-22 are allowable for at least the same reasons given above with respect to claim 1. In addition, Appellant submits that claims 20-22 are further distinguished over *Shimano* and *Sugawara* by the additional elements recited therein, and particularly with

respect to each claimed combination. Applicant respectfully requests, therefore, that the rejection of claims 20-22 under 35 U.S.C. §103 not be sustained, and that these claims be allowed.

C. Claims 9 and 23-25 are allowable over the applied art

Independent claim 9 recites an optical disc device comprising a rotary operating mechanism for driving one or more than one optical discs operating so many pieces of optical recording medium as to rotate; and an optical pickup device arranged opposite to the signal recording surfaces of the one or more than one optical discs driven to rotate by said rotary operating mechanism; said optical pickup device comprising, first light source for emitting a first light beam having a first wavelength; a second light source for emitting a second light beam having a second wavelength different from the first wavelength; an objective lens for focusing said first light beam or said second light beam to the signal recording surface of an optical recording medium of a first type matching to the first wavelength or that of an optical recording medium of a second type matching to the second wavelength, whichever appropriate; a photodetector for detecting the light beam focused on the signal recording surface of the optical recording medium of the first type or that of the optical recording medium of the second type, whichever appropriate, by the objective lens and reflected by the signal recording surface; and a diffraction element arranged on the light path from the light sources to the photodetector by way of one of the first or second type of optical recording medium, the diffraction element having a first diffraction angle and a second diffraction angle, wherein a difference between the first diffraction angle and the second diffraction angle is predetermined to offset a distance separating the first light source and the second light source; at least either the first light beam adapted to be used for reading information signals from the signal recording surface of the optical recording medium of the first type and reflected by the reflecting surface or the second light beam adapted to be used for reading information signals from the signal recording surface of the optical recording medium of the second type and reflected by the reflecting surface being diffracted by the diffraction element, wherein the first diffraction angle diffracts the first reflected light beam and the second diffraction angle diffracts the second reflected light beam so that the first reflected light beam and the second reflected light beam being focused to a same spot on the light receiving surface of the photodetector.

In the final rejection, the Examiner alleges that the claimed elements of a rotary operating mechanism for driving one or more than one optical discs operating so many pieces of optical recording medium as to rotate; and an optical pickup device arranged opposite to the signal recording surfaces of the one or more than one optical discs driven to rotate by said rotary operating mechanism, are inherent in "these kind of recording devices." *See* Paper No. 7, pg. 4 item 6. Appellant notes, however, that because the Examiner has not provided an evidence to support this inherency argument, this argument is conclusory and mere speculation. An argument as such is insufficient to support or sustain a rejection.

As a rule, "assertions of technical facts in areas of esoteric technology must always be supported by citation to some reference work recognized as standard in the pertinent art and the appellant given, in the Patent Office, the opportunity to challenge the correctness of the assertion or the notoriety or repute of the cited reference." (Citations omitted). *In re Pardo and Landau*, 214 USPQ 673, 677 (CCPA 1982). The support must have existed at the time the claimed invention was made. *In re Merck & Co., Inc.*, 231 USPQ 375, 379 (Fed. Cir. 1986). "Allegations concerning specific 'knowledge' of the prior art, which might be peculiar to a particular art should also be supported and the appellant similarly given the opportunity to make a challenge." (Citations omitted). *In re Pardo and Landau*, 214 USPQ 673, 677 (CCPA 1982).

As discussed above, *Shimano* and *Sugawara* either singly or combined fail to disclose, teach, or suggest at least a diffraction element having a first diffraction angle and a second diffraction angle, wherein a difference between the first diffraction angle and the second diffraction angle is predetermined to offset a distance separating the first light source and the second light source, and wherein the first diffraction angle diffracts the first reflected light beam and the second diffraction angle diffracts the second reflected light beam so that the first reflected light beam and the second reflected light beam being focused to a same spot on the light receiving surface of the photodetector. In particular, the Examiner acknowledged that *Shimano* fails to disclose the aforementioned claim element, and as Appellant discussed above, because Sugawara has only one light emitting element it cannot disclose, teach, or suggest the aforementioned claim element. For at least these reasons, a *prima facie* case for obviousness has not been established. Accordingly, Appellant respectfully requests that the rejection of claim 9 not be sustained.

Claims 23-25 depend from claim 9. By virtue of this dependency, Appellant submits

that claims 23-25 are allowable for at least the same reasons given above with respect to claim 9. In addition, Appellant submits that claims 23-25 are further distinguished over *Shimano* and *Sugawara* by the additional elements recited therein, and particularly with respect to each claimed combination. Applicant respectfully requests, therefore, that the rejection of claims 23-25 under 35 U.S.C. §103 not be sustained, and that these claims be allowed.

D. Claims 10 and 26-28 are allowable over the applied art

Independent claim 10 recites an optical disc device comprising a rotary operating mechanism for driving one or more than one optical discs operating so many pieces of optical recording medium as to rotate; and an optical pickup device arranged opposite to the signal recording surfaces of the one or more than one optical discs driven to rotate by said rotary operating mechanism; said optical pickup device comprising, a first light source for emitting a first light beam having a first wavelength; a second light source for emitting a second light beam having a second wavelength different from the first wavelength; an objective lens for focusing said first light beam or said second light beam to the signal recording surface of an optical recording medium of a first type matching to the first wavelength or that of an optical recording medium of a second type matching to the second wavelength, whichever appropriate; a photodetector for detecting the light beam focused on the signal recording surface of the optical recording medium of the first type or that of the optical recording medium of the second type, whichever appropriate, by the objective lens and reflected by the signal recording surface; and a diffraction element arranged on the light path from the light sources to the photodetector by way of one of the first or second type of optical recording medium, the diffraction element having a first diffraction angle and a second diffraction angle, wherein a difference between the first diffraction angle and the second diffraction angle is predetermined to offset a distance separating the first light source and the second light source; each of the first light beam adapted to be used for reading information signals from the signal recording surface of the optical recording medium of the first type and reflected by the reflecting surface and the second light beam adapted to be used for reading information signals from the signal recording surface of the optical recording medium of the second type and reflected by the reflecting surface being diffracted by the diffraction element, wherein the first diffraction angle diffracts the first reflected light beam and the second

diffraction angle diffracts the second reflected light beam so that the first reflected light beam and the second reflected light beam being focused to a same spot on the light receiving surface of the photodetector.

As discussed above, the Examiner alleges that the claimed element of a rotary operating mechanism for driving one or more than one optical discs operating so many pieces of optical recording medium as to rotate; and an optical pickup device arranged opposite to the signal recording surfaces of the one or more than one optical discs driven to rotate by said rotary operating mechanism, are inherent in "these kind of recording devices." *See* Paper No. 7, p. 4, item 6. Appellant notes, however, that because the Examiner has not provided an evidence to support this inherency argument, this argument is conclusory and mere speculation. An argument as such is insufficient to support or sustain a rejection.

"To establish inherency, the extrinsic evidence must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill. Inherency, however, may not established by probabilities or possibilities. The mere fact that a certain thing may result for a given set of circumstances is not sufficient.'" *In re Robertson*, 169 R.3d 743, 745, 49 USPQ2d 1949, 1950-51 (Fed. Cir. 1999).

As discussed above, *Shimano* and *Sugawara* either singly or combined fail to disclose, teach, or suggest at least a diffraction element having a first diffraction angle and a second diffraction angle, wherein a difference between the first diffraction angle and the second diffraction angle is predetermined to offset a distance separating the first light source and the second light source, and wherein the first diffraction angle diffracts the first reflected light beam and the second diffraction angle diffracts the second reflected light beam so that the first reflected light beam and the second reflected light beam being focused to a same spot on the light receiving surface of the photodetector. In particular, the Examiner acknowledged that *Shimano* fails to disclose the aforementioned claim element, and as Appellant discussed above, because Sugawara has only one light emitting element it cannot disclose, teach, or suggest the aforementioned claim element. For at least these reasons, a *prima facie* case for obviousness has not been established. Accordingly, Appellant respectfully requests that the rejection of claim 10 not be sustained.

Claims 26-28 depend from claim 10. By virtue of this dependency, Appellant submits that claims 23-25 are allowable for at least the same reasons given above with respect to

claim 10. In addition, Appellant submits that claims 26-28 are further distinguished over *Shimano* and *Sugawara* by the additional elements recited therein, and particularly with respect to each claimed combination. Applicant respectfully requests, therefore, that the rejection of claims 26-28 under 35 U.S.C. §103 not be sustained, and that these claims be allowed.

E. Claim 29 is allowable over the applied art

Independent claim 29 recites an optical pickup device comprising a first light source for emitting a first light beam having a first wavelength; a second light source for emitting a second light beam having a second wavelength different from the first wavelength; an objective lens for focusing said first light beam or said second light beam to the signal recording surface of an optical recording medium of a first type matching to the first wavelength or that of an optical recording medium of a second type matching to the second wavelength, whichever appropriate; a photodetector for detecting the light beam focused on the signal recording surface of the optical recording medium of the first type or that of the optical recording medium of the second type, whichever appropriate, by the objective lens and reflected by the signal recording surface; and a diffraction element arranged on the light path, wherein the diffraction element includes a first diffraction angle and a second diffraction angle, wherein a difference between the first diffraction angle and the second diffraction angle is predetermined to offset a distance separating the first light source and the second light source; at least either the first light beam adapted to be used for reading information signals from the signal recording surface of the optical recording medium of the first type and reflected by the reflecting surface or the second light beam adapted to be used for reading information signals from the signal recording surface of the optical recording medium of the second type and reflected by the reflecting surface being diffracted by the diffraction element, wherein the first diffraction angle diffracts the first reflected light beam and the second diffraction angle diffracts the second reflected light beam so that the first reflected light beam and the second reflected light beam being focused to a same spot on the light receiving surface of the photodetector.

As discussed above, *Shimano* and *Sugawara* either singly or combined fail to disclose, teach, or suggest at least diffraction element having a first diffraction angle and a second diffraction angle, wherein a difference between the first diffraction angle and the

second diffraction angle is predetermined to offset a distance separating the first light source and the second light source, and wherein the first diffraction angle diffracts the first reflected light beam and the second diffraction angle diffracts the second reflected light beam so that the first reflected light beam and the second reflected light beam being focused to a same spot on the light receiving surface of the photodetector. In particular, the Examiner acknowledged that *Shimano* fails to disclose the aforementioned claim element, and as Appellant discussed above, because Sugawara has only one light emitting element it cannot disclose, teach, or suggest the aforementioned claim element. For at least these reasons, a *prima facie* case for obviousness has not been established. Accordingly, Appellant respectfully requests that the rejection of claim 29 not be sustained.

(v) Other

None.

Conclusion

For at least the foregoing reasons, Appellant submits that the final rejection of claims 1, 2, 9, 10, and 17-29 is improper and should not be sustained. Accordingly, Appellant requests reversal of the final rejection dated December 9, 2003 (Paper No. 7).

IX. CLAIMS INVOLVED IN THE APPEAL

A copy of the claims involved in the present appeal is attached hereto as Appendix A.

Appellant has authorized that Deposit Account No. 18-0013 be charged under Order No. SON-2045 for the fee due with this response. However, if any additional fee is due, please charge our Deposit Account No. 18-0013, from which the undersigned is authorized to draw.

Dated: May 17, 2004

Respectfully submitted,

By: _____

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In the event additional fees are necessary in connection with the filing of this paper, or if a petition for extension of time is required for timely acceptance of same, the Commissioner is hereby authorized to charge Deposit Account No. 180013 for any such fees; and appellants hereby petition for any needed extension of time.

APPENDIX A

Claims Involved in the Appeal of Application Serial No. 09/801,343

A listing of the claims involved in the present appeal is set forth below:

1. (PREVIOUSLY PRESENTED) An optical pickup device comprising:

a first light source for emitting a first light beam having a first wavelength;

a second light source for emitting a second light beam having a second wavelength different from the first wavelength;

an objective lens for focusing said first light beam or said second light beam to the signal recording surface of an optical recording medium of a first type matching to the first wavelength or that of an optical recording medium of a second type matching to the second wavelength, whichever appropriate;

a photodetector for detecting the light beam focused on the signal recording surface of the optical recording medium of the first type or that of the optical recording medium of the second type, whichever appropriate, by the objective lens and reflected by the signal recording surface;

a diffraction element arranged in the light path from the light sources to the photodetector by way of one of the first or second type of optical recording medium, the diffraction element having a first diffraction angle and a second diffraction angle, wherein a difference between the first diffraction angle and the second diffraction angle is predetermined to offset a distance separating the first light source and the second light source; and

at least one of the first light beam adapted to be used for reading information signals from the signal recording surface of the optical recording medium of the first type and reflected by the reflecting surface, or the second light beam adapted to be used for reading information signals from the signal recording surface of the optical recording medium of the second type and reflected by the reflecting surface being diffracted by the diffraction element,

wherein the first diffraction angle diffracts the first reflected light beam and the second diffraction angle diffracts the second reflected light beam so that the first reflected light beam and the second reflected light beam being focused to a same spot on the light

receiving surface of the photodetector.

2. (PREVIOUSLY PRESENTED) An optical pickup device comprising:

a first light source for emitting a first light beam having a first wavelength;

a second light source for emitting a second light beam having a second wavelength different from the first wavelength;

an objective lens for focusing said first light beam or said second light beam to the signal recording surface of an optical recording medium of a first type matching to the first wavelength or that of an optical recording medium of a second type matching to the second wavelength, whichever appropriate;

a photodetector for detecting the light beam focused on the signal recording surface of the optical recording medium of the first type or that of the optical recording medium of the second type, whichever appropriate, by the objective lens and reflected by the signal recording surface; and

a diffraction element arranged on the light path from the light sources to the photodetector by way of one of the first or second type of optical recording medium, the diffraction element having a first diffraction angle and a second diffraction angle, wherein a difference between the first diffraction angle and the second diffraction angle is predetermined to offset a distance separating the first light source and the second light source;;

each of the first light beam adapted to be used for reading information signals from the signal recording surface of the optical recording medium of the first type and reflected by the reflecting surface and the second light beam adapted to be used for reading information signals from the signal recording surface of the optical recording medium of the second type and reflected by the reflecting surface being diffracted by the diffraction element, wherein the first diffraction angle diffracts the first reflected light beam and the second diffraction angle diffracts the second reflected light beam so that the first reflected light beam and the second reflected light beam being focused to a same spot on the light receiving surface of the photodetector.

3. (WITHDRAWN) An optical pickup device comprising:

a first light source for emitting a first light beam having a first wavelength;

a second light source for emitting a second light beam having a second wavelength different from the first wavelength;

an objective lens for focussing said first light beam or said second light beam to the signal recording surface of an optical recording medium of a first type matching to the first wavelength or that of an optical recording medium of a second type matching to the second wavelength, whichever appropriate;

a photodetector for detecting the light beam focussed on the signal recording surface of the optical recording medium of the first type or that of the optical recording medium of the second type, whichever appropriate, by the objective lens and reflected by the signal recording surface; and

a diffraction element arranged on the light path from the optical recording medium to the photodetector and carrying a pair of diffraction gratings arranged on the opposite surface planes of a single plate of a medium;

at least either the first light beam adapted to be used for reading information signals from the signal recording surface of the optical recording medium of the first type and reflected by the reflecting surface or the second light beam adapted to be used for reading information signals from the signal recording surface of the optical recording medium of the second type and reflected by the reflecting surface being diffracted by the diffraction element, the first reflected light beam and the second reflected light beam being focussed to a same spot on the light receiving surface of the photodetector.

4. (WITHDRAWN) An optical pickup device comprising:

a first light source for emitting a first light beam having a first wavelength;

a second light source for emitting a second light beam having a second wavelength different from the first wavelength;

an objective lens for focussing said first light beam or said second light beam to the signal recording surface of an optical recording medium of a first type matching to the first wavelength or that of an optical recording medium of a second type matching to the second wavelength, whichever appropriate;

a photodetector for detecting the light beam focussed on the signal recording surface of the optical recording medium of the first type or that of the optical recording medium of the second type, whichever appropriate, by the objective lens and reflected by the

signal recording surface; and

a diffraction element arranged on the light path from the optical recording medium to the photodetector by way of the two pieces of optical recording medium and carrying a pair of diffraction gratings arranged on the opposite surface planes of a single plate of a medium;

each of the first light beam adapted to be used for reading information signals from the signal recording surface of the optical recording medium of the first type and reflected by the reflecting surface and the second light beam adapted to be used for reading information signals from the signal recording surface of the optical recording medium of the second type and reflected by the reflecting surface being diffracted by the diffraction element, the first reflected
light beam and the second reflected light beam being focussed to a same spot on the light receiving surface of the photodetector.

5. (WITHDRAWN) An optical pickup device comprising:

a first light source for emitting a first light beam having a first wavelength;

a second light source for emitting a second light beam having a second wavelength different from the first wavelength;

an objective lens for focussing said first light beam or said second light beam to the signal recording surface of an optical recording medium of a first type matching to the first wavelength or that of an optical recording medium of a second type matching to the second wavelength, whichever appropriate;

a photodetector for detecting the light beam focussed on the signal recording surface of the optical recording medium of the first type or that of the optical recording medium of the second type, whichever appropriate, by the objective lens and reflected by the signal recording surface; and

a diffraction element arranged on the light path from the light sources to the optical recording medium and carrying a pair of diffraction gratings arranged on the opposite surface planes of a single plate of a medium;

at least either the first light beam adapted to be used for reading information signals from the signal recording surface of the optical recording medium of the first type and reflected by the reflecting surface or the second light beam adapted to be used for reading

information signals from the signal recording surface of the optical recording medium of the second type and reflected by the reflecting surface being diffracted by the diffraction element, the first reflected light beam and the second reflected light beam being focussed to a same spot on the light receiving surface of the photodetector.

6. (WITHDRAWN) An optical pickup device comprising:

a first light source for emitting a first light beam having a first wavelength;

a second light source for emitting a second light beam having a second wavelength different from the first wavelength;

an objective lens for focussing said first light beam or said second light beam to the signal recording surface of an optical recording medium of a first type matching to the first wavelength or that of an optical recording medium of a second type matching to the second wavelength, whichever appropriate;

a photodetector for detecting the light beam focussed on the signal recording surface of the optical recording medium of the first type or that of the optical recording medium of the second type, whichever appropriate, by the objective lens and reflected by the signal recording surface; and

a diffraction element having a pair of plates of a medium and arranged on the light path from the signal recording surfaces of the two pieces of optical recording medium to the photodetector, each of said plates carrying a diffraction grating formed on one of the surface planes;

at least either the first light beam adapted to be used for reading information signals from the signal recording surface of the optical recording medium of the first type and reflected by the reflecting surface or the second light beam adapted to be used for reading information signals from the signal recording surface of the optical recording medium of the second type and reflected by the reflecting surface being diffracted by the diffraction element, the first reflected light beam and the second reflected light beam being focussed to a same spot on the light receiving surface of the photodetector.

7. (WITHDRAWN) An optical pickup device comprising:

a first light source for emitting a first light beam having a first wavelength;

a second light source for emitting a second light beam having a second

wavelength different from the first wavelength;

an objective lens for focussing said first light beam or said second light beam to the signal recording surface of an optical recording medium of a first type matching to the first wavelength or that of an optical recording medium of a second type matching to the second wavelength, whichever appropriate;

a photodetector for detecting the light beam focussed on the signal recording surface of the optical recording medium of the first type or that of the optical recording medium of the second type, whichever appropriate, by the objective lens and reflected by the signal recording surface; and

a diffraction element having a pair of plates of a medium and arranged on the light path from the light sources to the photodetector by way of the two pieces of optical recording medium, each of said plates carrying a diffraction grating formed on one of the surface planes;

each of the first light beam adapted to be used for reading information signals from the signal recording surface of the optical recording medium of the first type and reflected by the reflecting surface and the second light beam adapted to be used for reading information signals from the signal recording surface of the optical recording medium of the second type and reflected by the reflecting surface being diffracted by the diffraction element, the first reflected light beam and the second reflected light beam being focussed to a same spot on the light receiving surface of the photodetector.

8. (WITHDRAWN) An optical pickup device comprising:

a first light source for emitting a first light beam having a first wavelength;

a second light source for emitting a second light beam having a second wavelength different from the first wavelength;

an objective lens for focussing said first light beam or said second light beam to the signal recording surface of an optical recording medium of a first type matching to the first wavelength or that of an optical recording medium of a second type matching to the second wavelength, whichever appropriate;

a photodetector for detecting the light beam focussed on the signal recording surface of the optical recording medium of the first type or that of the optical recording medium of the second type, whichever appropriate, by the objective lens and reflected by the

signal recording surface; and

a diffraction element having a pair of plates of a medium and arranged on the light path from the light sources to the signal recording surfaces of the two pieces of optical recording medium, each of said plates carrying a diffraction grating formed on one of the surface planes;

at least either the first light beam adapted to be used for reading information signals from the signal recording surface of the optical recording medium of the first type and reflected by the reflecting surface or the second light beam adapted to be used for reading information signals from the signal recording surface of the optical recording medium of the second type and reflected by the reflecting surface being diffracted by the diffraction element, the first reflected light beam and the second reflected light beam being focussed to a same spot on the light receiving surface of the photodetector.

9. (PREVIOUSLY PRESENTED) An optical disc device comprising:

a rotary operating mechanism for driving one or more than one optical discs operating so many pieces of optical recording medium as to rotate; and

an optical pickup device arranged opposite to the signal recording surfaces of the one or more than one optical discs driven to rotate by said rotary operating mechanism;

said optical pickup device comprising:

a first light source for emitting a first light beam having a first wavelength;

a second light source for emitting a second light beam having a second wavelength different from the first wavelength;

an objective lens for focusing said first light beam or said second light beam to the signal recording surface of an optical recording medium of a first type matching to the first wavelength or that of an optical recording medium of a second type matching to the second wavelength, whichever appropriate;

a photodetector for detecting the light beam focused on the signal recording surface of the optical recording medium of the first type or that of the optical recording medium of the second type, whichever appropriate, by the objective lens and reflected by the signal recording surface; and

a diffraction element arranged on the light path from the light sources to the photodetector by way of one of the first or second type of optical recording medium, the

diffraction element having a first diffraction angle and a second diffraction angle, wherein a difference between the first diffraction angle and the second diffraction angle is predetermined to offset a distance separating the first light source and the second light source;

at least either the first light beam adapted to be used for reading information signals from the signal recording surface of the optical recording medium of the first type and reflected by the reflecting surface or the second light beam adapted to be used for reading information signals from the signal recording surface of the optical recording medium of the second type and reflected by the reflecting surface being diffracted by the diffraction element, wherein the first diffraction angle diffracts the first reflected light beam and the second diffraction angle diffracts the second reflected light beam so that the first reflected light beam and the second reflected light beam being focused to a same spot on the light receiving surface of the photodetector.

10. (PREVIOUSLY PRESENTED) An optical disc device comprising:

a rotary operating mechanism for driving one or more than one optical discs operating so many pieces of optical recording medium as to rotate; and

an optical pickup device arranged opposite to the signal recording surfaces of the one or more than one optical discs driven to rotate by said rotary operating mechanism;

said optical pickup device comprising:

a first light source for emitting a first light beam having a first wavelength;

a second light source for emitting a second light beam having a second wavelength different from the first wavelength;

an objective lens for focusing said first light beam or said second light beam to the signal recording surface of an optical recording medium of a first type matching to the first wavelength or that of an optical recording medium of a second type matching to the second wavelength, whichever appropriate;

a photodetector for detecting the light beam focused on the signal recording surface of the optical recording medium of the first type or that of the optical recording medium of the second type, whichever appropriate, by the objective lens and reflected by the signal recording surface; and

a diffraction element arranged on the light path from the light sources to the photodetector by way of one of the first or second type of optical recording medium, the

diffraction element having a first diffraction angle and a second diffraction angle, wherein a difference between the first diffraction angle and the second diffraction angle is predetermined to offset a distance separating the first light source and the second light source;

each of the first light beam adapted to be used for reading information signals from the signal recording surface of the optical recording medium of the first type and reflected by the reflecting surface and the second light beam adapted to be used for reading information signals from the signal recording surface of the optical recording medium of the second type and reflected by the reflecting surface being diffracted by the diffraction element, wherein the first diffraction angle diffracts the first reflected light beam and the second diffraction angle diffracts the second reflected light beam so that the first reflected light beam and the second reflected light beam being focused to a same spot on the light receiving surface of the photodetector.

11. (WITHDRAWN) An optical disc device comprising:

a rotary operating mechanism for driving one or more than one optical discs operating so many pieces of optical recording medium as to rotate; and

an optical pickup device arranged opposite to the signal recording surfaces of the one or more than one optical discs driven to rotate by said rotary operating mechanism;

said optical pickup device comprising:

a first light source for emitting a first light beam having a first wavelength;

a second light source for emitting a second light beam having a second wavelength different from the first wavelength;

an objective lens for focussing said first light beam or said second light beam to the signal recording surface of an optical recording medium of a first type matching to the first wavelength or that of an optical recording medium of a second type matching to the second wavelength, whichever appropriate;

a photodetector for detecting the light beam focussed on the signal recording surface of the optical recording medium of the first type or that of the optical recording medium of the second type, whichever appropriate, by the objective lens and reflected by the signal recording surface; and

a diffraction element arranged on the light path from the optical recording medium to the photodetector and carrying a pair of diffraction gratings arranged on the

opposite surface planes of a single plate of a medium;

at least either the first light beam adapted to be used for reading information signals from the signal recording surface of the optical recording medium of the first type and reflected by the reflecting surface or the second light beam adapted to be used for reading information signals from the signal recording surface of the optical recording medium of the second type and reflected by the reflecting surface being diffracted by the diffraction element, the first reflected light beam and the second reflected light beam being focussed to a same spot on the light receiving surface of the photodetector.

12. (WITHDRAWN) An optical disc device comprising:

a rotary operating mechanism for driving one or more than one optical discs operating so many pieces of optical recording medium as to rotate; and

an optical pickup device arranged opposite to the signal recording surfaces of the one or more than one optical discs driven to rotate by said rotary operating mechanism;

said optical pickup device comprising:

a first light source for emitting a first light beam having a first wavelength;

a second light source for emitting a second light beam having a second wavelength different from the first wavelength;

an objective lens for focussing said first light beam or said second light beam to the signal recording surface of an optical recording medium of a first type matching to the first wavelength or that of an optical recording medium of a second type matching to the second wavelength, whichever appropriate;

a photodetector for detecting the light beam focussed on the signal recording surface of the optical recording medium of the first type or that of the optical recording medium of the second type, whichever appropriate, by the objective lens and reflected by the signal recording surface; and

a diffraction element arranged on the light path from the optical recording medium to the photodetector by way of the two pieces of optical recording medium and carrying a pair of diffraction gratings arranged on the opposite surface planes of a single plate of a medium;

each of the first light beam adapted to be used for reading information signals from the signal recording surface of the optical recording medium of the first type and

reflected by the reflecting surface and the second light beam adapted to be used for reading information signals from the signal recording surface of the optical recording medium of the second type and reflected by the reflecting surface being diffracted by the diffraction element, the first reflected light beam and the second reflected light beam being focussed to a same spot on the light receiving surface of the photodetector.

13. (WITHDRAWN) An optical disc device comprising:

a rotary operating mechanism for driving one or more than one optical discs operating so many pieces of optical recording medium as to rotate; and

an optical pickup device arranged opposite to the signal recording surfaces of the one or more than one optical discs driven to rotate by said rotary operating mechanism;

said optical pickup device comprising:

a first light source for emitting a first light beam having a first wavelength;

a second light source for emitting a second light beam having a second wavelength different from the first wavelength;

an objective lens for focussing said first light beam or said second light beam to the signal recording surface of an optical recording medium of a first type matching to the first wavelength or that of an optical recording medium of a second type matching to the second wavelength, whichever appropriate;

a photodetector for detecting the light beam focussed on the signal recording surface of the optical recording medium of the first type or that of the optical recording medium of the second type, whichever appropriate, by the objective lens and reflected by the signal recording surface; and

a diffraction element arranged on the light path from the light sources to the optical recording medium and carrying a pair of diffraction gratings arranged on the opposite surface planes of a single plate of a medium;

at least either the first light beam adapted to be used for reading information signals from the signal recording surface of the optical recording medium of the first type and reflected by the reflecting surface or the second light beam adapted to be used for reading information signals from the signal recording surface of the optical recording medium of the second type and reflected by the reflecting surface being diffracted by the diffraction element, the first reflected light beam and the second reflected light beam being focussed to a same

spot on the light receiving surface of the photodetector.

14. (WITHDRAWN) An optical disc device comprising:

a rotary operating mechanism for driving one or more than one optical discs operating so many pieces of optical recording medium as to rotate; and

an optical pickup device arranged opposite to the signal recording surfaces of the one or more than one optical discs driven to rotate by said rotary operating mechanism;

said optical pickup device comprising:

a first light source for emitting a first light beam having a first wavelength;

a second light source for emitting a second light beam having a second wavelength different from the first wavelength;

an objective lens for focussing said first light beam or said second light beam to the signal recording surface of an optical recording medium of a first type matching to the first wavelength or that of an optical recording medium of a second type matching to the second wavelength, whichever appropriate;

a photodetector for detecting the light beam focussed on the signal recording surface of the optical recording medium of the first type or that of the optical recording medium of the second type, whichever appropriate, by the objective lens and reflected by the signal recording surface; and

a diffraction element having a pair of plates of a medium and arranged on the light path from the signal recording surfaces of the two pieces of optical recording medium to the photodetector, each of said plates carrying a diffraction grating formed on one of the surface planes;

at least either the first light beam adapted to be used for reading information signals from the signal recording surface of the optical recording medium of the first type and reflected by the reflecting surface or the second light beam adapted to be used for reading information signals from the signal recording surface of the optical recording medium of the second type and reflected by the reflecting surface being diffracted by the diffraction element, the first reflected light beam and the second reflected light beam being focussed to a same spot on the light receiving surface of the photodetector.

15. (WITHDRAWN) An optical disc device comprising:

a rotary operating mechanism for driving one or more than one optical discs operating as so many pieces of optical recording medium to rotate; and

an optical pickup device arranged opposite to the signal recording surfaces of the one or more than one optical discs driven to rotate by said rotary operating mechanism;

said optical pickup device comprising:

a first light source for emitting a first light beam having a first wavelength;

a second light source for emitting a second light beam having a second wavelength different from the first wavelength;

an objective lens for focussing said first light beam or said second light beam to the signal recording surface of an optical recording medium of a first type matching to the first wavelength or that of an optical recording medium of a second type matching to the second wavelength, whichever appropriate;

a photodetector for detecting the light beam focussed on the signal recording surface of the optical recording medium of the first type or that of the optical recording medium of the second type, whichever appropriate, by the objective lens and reflected by the signal recording surface; and

a diffraction element having a pair of plates of a medium and arranged on the light path from the light sources to the photodetector by way of the two pieces of optical recording medium, each of said plates carrying a diffraction grating formed on one of the surface planes;

each of the first light beam adapted to be used for reading information signals from the signal recording surface of the optical recording medium of the first type and reflected by the reflecting surface and the second light beam adapted to be used for reading information signals from the signal recording surface of the optical recording medium of the second type and reflected by the reflecting surface being diffracted by the diffraction element, the first reflected light beam and the second reflected light beam being focussed to a same spot on the light receiving surface of the photodetector.

16. (WITHDRAWN) An optical disc device comprising:

a rotary operating mechanism for driving one or more than one optical discs operating so many pieces of optical recording medium as to rotate; and

an optical pickup device arranged opposite to the signal recording surfaces of

the one or more than one optical discs driven to rotate by said rotary operating mechanism;

said optical pickup device comprising:

a first light source for emitting a first light beam having a first wavelength;

a second light source for emitting a second light beam having a second wavelength different from the first wavelength;

an objective lens for focussing said first light beam or said second light beam to the signal recording surface of an optical recording medium of a first type matching to the first wavelength or that of an optical recording medium of a second type matching to the second wavelength, whichever appropriate;

a photodetector for detecting the light beam focussed on the signal recording surface of the optical recording medium of the first type or that of the optical recording medium of the second type, whichever appropriate, by the objective lens and reflected by the signal recording surface; and

a diffraction element having a pair of plates of a medium and arranged on the light path from the light sources to the signal recording surfaces of the two pieces of optical recording medium, each of said plates carrying a diffraction grating formed on one of the surface planes;

at least either the first light beam adapted to be used for reading information signals from the signal recording surface of the optical recording medium of the first type and reflected by the reflecting surface or the second light beam adapted to be used for reading information signals from the signal recording surface of the optical recording medium of the second type and reflected by the reflecting surface being diffracted by the diffraction element, the first reflected light beam and the second reflected

17. (PREVIOUSLY PRESENTED) The optical pickup device of claim 1, wherein the diffraction element generates a pair of sub-beams from the first reflected light beam and the second reflected light beam, where applicable.

18. (PREVIOUSLY PRESENTED) The optical pickup device of claim 1 wherein the diffraction element includes a diffraction grating pattern on one of the opposite side surfaces of a plate.

19. (PREVIOUSLY PRESENTED) The optical pickup device of claim 18, wherein the diffraction grating pattern is a blazed grating design.

20. (PREVIOUSLY PRESENTED) The optical pickup device of claim 2, wherein the diffraction element generates a pair of sub-beams from the first reflected light beam and the second reflected light beam, where applicable.

21. (PREVIOUSLY PRESENTED) The optical pickup device of claim 2 wherein the diffraction element includes a diffraction grating pattern on one of the opposite side surfaces of a plate.

22. (PREVIOUSLY PRESENTED) The optical pickup device of claim 21, wherein the diffraction grating pattern is a blazed grating design.

23. (PREVIOUSLY PRESENTED) The optical pickup device of claim 9, wherein the diffraction element generates a pair of sub-beams from the first reflected light beam and the second reflected light beam, where applicable.

24. (PREVIOUSLY PRESENTED) The optical pickup device of claim 9 wherein the diffraction element includes a diffraction grating pattern on one of the opposite side surfaces of a plate.

25. (PREVIOUSLY PRESENTED) The optical pickup device of claim 24, wherein the diffraction grating pattern is a blazed grating design.

26. (PREVIOUSLY PRESENTED) The optical pickup device of claim 10, wherein the diffraction element generates a pair of sub-beams from the first reflected light beam and the second reflected light beam, where applicable.

27. (PREVIOUSLY PRESENTED) The optical pickup device of claim 10, wherein the diffraction element includes a diffraction grating pattern on one of the opposite side surfaces of a plate.

28. (PREVIOUSLY PRESENTED) The optical pickup device of claim 27, wherein the diffraction grating pattern is a blazed grating design.

29. (PREVIOUSLY PRESENTED) An optical pickup device comprising:

a first light source for emitting a first light beam having a first wavelength;

a second light source for emitting a second light beam having a second wavelength different from the first wavelength;

an objective lens for focusing said first light beam or said second light beam to the signal recording surface of an optical recording medium of a first type matching to the first wavelength or that of an optical recording medium of a second type matching to the second wavelength, whichever appropriate;

a photodetector for detecting the light beam focused on the signal recording surface of the optical recording medium of the first type or that of the optical recording medium of the second type, whichever appropriate, by the objective lens and reflected by the signal recording surface; and

a diffraction element arranged on the light path, wherein the diffraction element includes a first diffraction angle and a second diffraction angle, wherein a difference between the first diffraction angle and the second diffraction angle is predetermined to offset a distance separating the first light source and the second light source;

at least either the first light beam adapted to be used for reading information signals from the signal recording surface of the optical recording medium of the first type and reflected by the reflecting surface or the second light beam adapted to be used for reading information signals from the signal recording surface of the optical recording medium of the second type and reflected by the reflecting surface being diffracted by the diffraction element, wherein the first diffraction angle diffracts the first reflected light beam and the second diffraction angle diffracts the second reflected light beam so that the first reflected light beam and the second reflected light beam being focused to a same spot on the light receiving surface of the photodetector.